

REMARKS

The Office Action dated September 8, 2003 has been received and carefully studied.

The Examiner newly rejects claims 1-20, 22-24 and 31-34 under 35 U.S.C. §103(a) as being obvious over Fernwood et al. in view of Robertson and/or Moring, further in view of Tate et al. and/or Schlor et al. and/or Groteke. The Examiner also rejects claims 2 and 10 under 35 U.S.C. §103(a) as being unpatentable over Fernwood in view of Moring and/or Robertson and further in view of Tate and/or Schlor and or Groteke, and still further in view of Foltz, and claim 21 as being unpatentable over Fernwood in view of Moring and/or Robertson and further in view of Tate and/or Schlor and or Groteke, and still further in view of Bowers.

The rejection is respectfully traversed.

The Examiner is interpreting the portion of the Fernwood membrane sheet 13 that is not within the sample reservoir 12 to be the "housing". Apparently since these portions are not filtering and can be non-porous, they somehow form a housing within the meaning of the claims. However, if the non-porous portions of the sheet are considered the housing, then its thickness of that housing is necessarily the thickness of the sheet. The instant claims require that the self-retaining structure comprising the porous matrix be contained in that housing and have a height less than or equal to that thickness, and have an aspect ratio of less than about 20. This is not disclosed by Fernwood.

In order to further distinguish the present invention from Fernwood, claims 1, 9, 17, 31 33 and 34 have been amended to recite that the structure is self-adhered by adhesion to the solid walls of the housing. Support for the amendment can be found at page 10, lines 13-22, for example. Even if one interprets the sheet 13 of Fernwood to be the housing with porous portions contained therein, those porous portions are not chemically self-adhered to the solid walls of that housing as now recited in the instant claims as amended.

The Examiner agrees that Fernwood fails to disclose the aspect ratio claimed. The Examiner

newly cites Robertson and Moring as teaching the claimed aspect ratio, and concludes that it would have been obvious to use porous circles in the apertures of the non-porous sheet of Fernwood having an aspect ratio of less than 20.

Robertson does not disclose the above deficiencies of Fernwood, namely, that the structure is chemically self-adhered to the solid walls of the housing.

Moreover, Robertson discloses a typical 96-well plate assembly with a filter sheet between the holding tray and a collimator. The filter sheet 16 is positioned on the holding tray 14 beneath the collimator 18. Accordingly, the filter medium is not in the wells of the holding tray, but rather is beneath them. Thus, there is no filter structure in the wells. Our claims require that the structure that is contained in the apertures of the housing have an aspect ratio of less than about 20; Robertson has no structure in the apertures of its housing.

Moring also does not disclose the above deficiencies of Fernwood, namely, that the structure is chemically self-adhered to the solid walls of the housing. Accordingly, even if one skilled in the art were somehow motivated to modify the sheet 13 of Fernwood and somehow form the porous portions having the aspect ratio disclosed in Moring, the invention as now claimed would not be achieved.

With respect to the self adhesion limitation, the Examiner cites Tate et al., Schlör et al. and Groteke as teaching a filter contained in a support by adhesion such as gluing or cementing. However, this is not self-adhesion; these references teach adhesion using a third component, namely, glue or cement.

Foltz is cited against claims 2 and 10 for its disclosure of entrapment of adsorbent particles in filter matrixes. Bowers is cited against claim 21 for its disclosure of a filtration system with sample reservoirs and an underdrain having spouts. Neither reference supplies the deficiencies of Fernwood as discussed above.

Reconsideration and allowance are respectfully requested in view of the foregoing.

Respectfully submitted,



Kevin S. Lemack

Reg. No. 32,579

176 E. Main Street

Westboro, Massachusetts 01581

TEL: (508) 898-1818

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A housing having a thickness, said housing have a first surface and a second surface spaced from said first surface by said housing thickness, said housing having one or more apertures formed through said housing, each of said one or more apertures defined by solid walls extending through said thickness of said housing and containing a self-retaining structure, chemically self-adhered to said solid walls, by adhesion, structure comprising a porous matrix, said structure having a height between said first surface and said second surface less than or equal to said thickness, said structure having an aspect ratio of less than about 20.

2. (Original) The housing of claim 1, wherein said porous matrix comprises a plurality of sorptive particles entrapped therein.

3. (Original) The housing of claim 1, wherein said porous matrix is polymeric.

4. (Original) The housing of claim 1, wherein said structure is functionalized for adsorption.

5. (Original) The housing of claim 1, wherein said housing is a planar substrate.

6. (Original) The housing of claim 1, wherein said housing is a multi-well plate.

7. (Original) The housing of claim 1, wherein said structure is coterminous with said first surface.

8. (Original) The housing of claim 7, wherein said structure is coterminous with said second surface.

9. (Currently amended) A housing having a thickness, a length and a width, said housing having a first surface and a second surface spaced from said first surface by said thickness, the dimensions of said thickness being less than the dimensions of said length and/or said width, said housing having one or more apertures formed through said housing and defined by solid walls

extending through said thickness, each of said one or more apertures containing a self-retaining structure, chemically self-adhered to said solid walls, ~~by adhesion, structure~~ comprising a porous matrix.

10. (Original) The housing of claim 9, wherein said porous matrix comprises a plurality of sorptive particles entrapped therein.

11. (Original) The housing of claim 9, wherein said porous matrix is polymeric.

12. (Original) The housing of claim 9, wherein said structure is functionalized for adsorption.

13. (Original) The housing of claim 9, wherein said housing is a planar substrate.

14. (Original) The housing of claim 9, wherein said housing is a multi-well plate.

15. (Original) The housing of claim 9, wherein said structure is coterminous with said first surface.

16. (Original) The housing of claim 15, wherein said structure is coterminous with said second surface.

17. (Currently amended) A sample preparation devices, comprising a sample reservoir and a collection reservoir spaced from said sample reservoir, and a substrate between said sample reservoir and said collection reservoir, said substrate have a first surface and a second surface spaced from said first surface defining a thickness, said substrate comprising one or more recesses formed therethrough, each of said one or more recesses defined by solid walls extending through said thickness and containing a self-retaining structure, chemically self-adhered to said solid walls, ~~by adhesion, structure~~ comprising a porous matrix, said structure having a height between said first surface and said second surface less than or equal to said thickness, said structure having an aspect ratio of less than about 20.

18. (Original) The sample preparation device of claim 17, wherein said porous matrix

comprises a plurality of sorptive particles.

19. (Currently amended) The sample preparation device of claim 17, further comprising an underdrain having one or more spouts, each in fluid communication with a respective said one or more recesses of said substrate.

20. (Original) The sample preparation device of claim 19, wherein said one or more spouts direct fluid into said collection reservoir.

21. (Original) The sample preparation device of claim 19, wherein said sample reservoir and said underdrain are bonded to said substrate.

22. (Original) The sample preparation device of claim 17, wherein said porous structure is coterminous with said first surface.

23. (Original) The sample preparation device of claim 22, wherein said porous structure is coterminous with said second surface.

24. (Original) The sample preparation device of claim 17, wherein said substrate is removable from said housing.

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (Currently amended) A sample preparation device for use with a chamber in communication with a driving force, said device comprising:

a sample reservoir; a substrate fixed to said sample reservoir, said substrate having a first surface and a second surface spaced from said first surface, said substrate comprising at least one

recess formed therethrough, said at least one recess defined by solid walls extending through said substrate and containing a self-retaining structure, chemically self-adhered to said solid walls, by ~~adhesion, structure~~ comprising a porous matrix; and a spout fixed to said at least one recess for directing flow into said chamber.

32. (Original) The sample preparation device of claim 31, wherein said substrate comprises a plurality of recesses.

33. (Currently amended) A housing having a thickness, said housing have a first surface and a second surface spaced from said first surface by said housing thickness, said housing having one or more apertures formed through said housing, each of said one or more apertures defined by solid walls extending through said thickness and containing a structure, chemically self-adhered to said solid walls, comprising a porous matrix, said structure having a height between said first surface and said second surface less than or equal to said thickness, said structure being self-retaining in said housing by adhesion.

34. (Currently amended) A filtration device comprising a substrate having first and second spaced surfaces defining a housing thickness and an array of spaced, independent apertures formed through said housing thickness, each of said independent apertures defined by solid walls extending through said thickness and containing a formed porous matrix, the porous matrix in each independent aperture being segregated from the porous matrix in each other different independent aperture, said first and second surfaces in the space between said apertures being devoid of said porous matrix, said porous matrix adapted to be self-retaining in said apertures and being chemically adhered to said solid walls ~~by adhesion~~.